

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) ~~Computer software~~ A tool set for simulating a tri-tone attenuated phase-shifting mask including a plurality of structures, a subset of the structures including a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim, the ~~software tool set~~ comprising:

means for analyzing optical proximity correction for the subset of the structures; and

means for providing a ~~substantially similar~~ same rim width in the subset of the structures based on edges provided by the means for analyzing.

2. (Currently Amended) A tool set for simulating a tri-tone attenuated phase-shifting mask including a plurality of structures, a subset of the structures including a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim, the tool set comprising:

means for analyzing optical proximity correction for the subset of the structures; and

means for providing a same rim width in the subset of the structures ~~The computer software of Claim 1,~~

wherein the means for providing includes:

means for dividing a first edge of the attenuated region into a plurality of first segments;

means for dividing a second edge of the opaque region into a plurality of second segments, wherein each second segment corresponds to a certain first segment; and

means for determining whether a second segment moves with its corresponding first segment during optical proximity correction.

3. (Currently Amended) A tool set for simulating a tri-tone attenuated phase-shifting mask including a plurality of structures, a subset of the structures including a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim, the tool set comprising:

means for analyzing optical proximity correction for the subset of the structures; and

means for providing a same rim width in the subset of the structures ~~The computer software of Claim 1,~~

wherein the means for providing includes:

means for downsizing the attenuated region and then upsizing the attenuated region to generate the ~~substantially similar~~ same rim width.

4. (Currently Amended) A tool set for simulating a tri-tone attenuated phase-shifting mask including a plurality of structures, a subset of the structures including a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim, the tool set comprising:

means for analyzing optical proximity correction for the subset of the structures; and

means for providing a same rim width in the subset of the structures ~~The computer software of Claim 1,~~

wherein the means for providing includes:

means for downsizing the attenuated region to generate the ~~substantially similar~~ same rim width.

5. (Currently Amended) ~~Computer software~~ A tool set to convert an integrated circuit layout into an attenuated phase-shifting mask layout for fabricating the integrated circuit, the ~~software tool set~~ comprising:

means for identifying a subset of structures in the integrated circuit layout;

means for converting the subset of structures into the mask layout, wherein each converted structure includes a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim;

means for analyzing optical proximity correction for a plurality of converted structures; and

means for providing a ~~substantially similar~~ same rim width for the plurality of converted structures based on edges provided by the means for analyzing.

6. (Currently Amended) A tool set to convert an integrated circuit layout into an attenuated phase-shifting mask layout for fabricating the integrated circuit, the tool set comprising:

means for identifying a subset of structures in the integrated circuit layout;

means for converting the subset of structures into the mask layout, wherein each converted structure includes a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim;

means for analyzing optical proximity correction for a plurality of converted structures; and

means for providing a same rim width for the plurality of converted structures ~~The computer software of Claim 5,~~

wherein the means for providing includes:

means for dividing a first edge of the attenuated region into a plurality of first segments;

means for dividing a second edge of the opaque region into a plurality of second segments, wherein each second segment corresponds to a certain first segment; and

means for determining whether a second segment moves with its corresponding first segment during optical proximity correction.

7. (Currently Amended) A tool set to convert an integrated circuit layout into an attenuated phase-shifting mask layout for fabricating the integrated circuit, the tool set comprising:

means for identifying a subset of structures in the integrated circuit layout;

means for converting the subset of structures into the mask layout, wherein each converted structure includes a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim;

means for analyzing optical proximity correction for a plurality of converted structures; and

means for providing a same rim width for the plurality of converted structures ~~The computer software of Claim 5,~~

wherein the means for providing includes:

means for downsizing the attenuated region and then upsizing the attenuated region to generate the ~~substantially similar~~ same rim width.

8. (Currently Amended) A tool set to convert an integrated circuit layout into an attenuated phase-shifting mask layout for fabricating the integrated circuit, the tool set comprising:

means for identifying a subset of structures in the integrated circuit layout;

means for converting the subset of structures into the mask layout, wherein each converted structure includes a transparent region, an opaque region, and an attenuated region, wherein the opaque region and the attenuated region form a rim;

means for analyzing optical proximity correction for a plurality of converted structures; and

means for providing a same rim width for the plurality of converted structures ~~The computer software of Claim 5,~~

wherein the means for providing includes:

means for downsizing the attenuated region to generate the ~~substantially similar~~ same rim width.